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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,528	03/31/2004	Tom E. Pearson	ITL.1105US (P18745)	6903

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EXAMINER	
GIRARDI, VANESSA MARY	

ART UNIT	PAPER NUMBER
2833	

DATE MAILED: 10/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/814,528	PEARSON ET AL.	
	Examiner	Art Unit	
	Vanessa Girardi	2833	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1- 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

   a. Page 6, lines 7 and 8 refer to –the spring based tabs 32 – yet lines 18 and 19 refer to -- mounted on a prong 32 --. Reference number 32 should refer to one distinct characteristic.

   b. Page 8, line 2, -- underside of the socket 24a – in keeping with the scope of the invention it is believed the word "socket" should be cap.

   Appropriate corrections required.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "32" has been used to designate both spring based tabs and a prong. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim objections

3. Claims 2, 13 and 14 are objected to because of the following informalities:

Claim 2 states – said cap includes a plurality of openings formed through the cover --. For examination purposes the openings are treated as being in the cap through to the cover.

Claim 13 states it depends from claim 1. For examination purposes claim 13 was treated as dependent upon claim 11.

Appropriate corrections are required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-5, 8-14, 17-21, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over (US 6,877,990 B2) in view of Ciambrone (US 5,626,280).

Liao et al. shows An integrated circuit socket **1** comprising: a socket housing **21**; a hinged cover **25** secured to the housing; and a cap **3** removably secured to the cover (Col. 4, lines 13, 14).

However Liao et al. does not show the cap **3** as infrared transmissive.

Ciambrone shows an infrared transparent soldering tool **10** that caps the leads of a component to be soldered in an infrared reflow oven.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the moldable infrared transparent material that can sustain applied pressure as taught by Ciambrone for the cap of Liao et al. as a means of obtaining a reliably soldered product.

With respect to claim 2; Liao et al. shows the cap **3** includes a plurality of openings **302** and **303** to allow the passage of heated air (Col. 4, lines 6, 7).

With respect to claim 3; Liao et al. shows spring catches **307** and **308** on opposed ends of the cap to removeably secure the cap to the cover.

With respect to claims 4 and 5; Liao et al. as modified by Ciambrone has been discussed above.

However Liao et al. does not show the cap **3** as transmissive to infrared radiation.

Ciambrone further teaches the soldering tool **10** material is *transparent* to infrared radiation (Col. 1, lines 41, 42).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made the modification to the cap of Liao et al. with the material taught by Ciambrone would permit transmission of *at least* 80% and 95% of incident infrared radiation providing the advantages discussed above.

With respect to claim 8; Liao et al. shows the cap **3** includes standoffs **309** which space the cap from the cover.

With respect to claim 9; Liao et al. shows the cap **3** has a curved lower surface **309**.

With respect to claim 10; Liao et al. shows the cap **3** includes at least two apertures **305** and downwardly extending prongs **308** extending away from the apertures to reflect incident radiation passing through the apertures.

With respect to claim 11; Liao et al. shows a cap **3** for an integrated circuit socket comprising: a body **30** having apertures **302**, **303**, and tabs **307**, **308** coupled to the body to removeably secure the body to an integrated circuit socket.

However Liao et al. does not show the body formed of a material that is infrared transmissive.

Ciambrone further teaches the soldering tool **10** material is transparent to infrared radiation (Col. 1, lines 41, 42).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the moldable infrared transparent material that can sustain applied pressure as taught by Ciambrone to form the cap body of Liao et al. as a means of obtaining a reliably soldered product.

With respect to claim 12; Liao et al. shows tabs **307**, **308** include spring catches on opposed ends of the cap to removeably secure the cap to the socket.

With respect to claims 13 and 14; Liao et al. as modified by Ciambrone has been discussed above.

However Liao et al. does not show the cap **3** as transmissive to infrared radiation.

Ciambrone further teaches the soldering tool **10** material is *transparent* to infrared radiation (Col. 1, lines 41, 42).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made the modification to the cap of Liao et al. with the material taught by Ciambrone would permit transmission of *at least* 80% and 95% of incident infrared radiation providing the advantages discussed above.

With respect to claim 17; Liao et al. shows the cap **3** includes standoffs **309** which space the cap from the cover.

With respect to claim 18; Liao et al. shows the cap **3** has a curved lower surface **309**.

With respect to claim 19; Liao et al. shows the cap **3** includes at least two apertures **305** and downwardly extending prongs **308** extending away from the apertures to reflect incident radiation passing through the apertures.

With respect to claim 20; Liao et al. shows the cap **3** includes guides **309** and **305** to guide the cap into alignment with the socket.

With respect to claim 21; Liao et al. shows a method comprising: securing a cap to an integrated circuit socket (Col. 3, lines 58-67) and (Col. 4, lines 1, 2); and surface mounting the socket to a printed circuit board (Col. 4, lines 6, 7).

However Liao et al. does not show cap **3** as transmissive to infrared radiation nor does Liao et al. disclose the suface mounting method as exposing the cap and the socket to infrared energy.

Ciambrone teaches the soldering tool **10** material is transparent to infrared radiation (Col. 1, lines 41, 42) specifically for use in an infrared reflow soldering machine (Col. 3, lines 20-23).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the moldable infrared transparent material that can sustain applied pressure as taught by Ciambrone to form the cap body of Liao et al. for use in an infrared reflow soldering machine as a means of obtaining a reliably soldered product using a method that allows for high rates of production.

With respect to claim 23; Liao et al. shows the cap **3** includes a plurality of openings **302** and **303** to allow the passage of heated air (Col. 4, lines 6, 7).

With respect to claim 25; Liao et al. as modified by Ciambrone has been discussed above.

However Liao et al. does not show the cap **3** as transmissive to infrared radiation.

Ciambrone further teaches the soldering tool **10** material is *transparent* to infrared radiation (Col. 1, lines 41, 42).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made the modification to the cap of Liao et al. with the material taught by Ciambrone would permit transmission of *at least* 80% of incident infrared radiation providing the advantages discussed above.

5. Claims 6, 7, 15, 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liao et al. (US 6,877,990 B2) and Ciambrone (US 5,626,280) as applied to claims 1, 11 and 21 above, and further in view of Yu (US 6,626,691). Liao et al. as modified by Ciambrone has been discussed above.

With respect to claims 6 and 15; neither Liao et al. nor Ciambrone show or teach the cap is formed of plastic.

Yu does teach the cap is formed from plastic (Col. 2, line 64).

With respect to claims 7, 16 and 24; the modified cap of Liao et al. and Ciambrone further modified by Yu does not explicitly teach a *(translucent) red* plastic.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a plastic material as taught by Yu to further modify the infrared transmissive cap of Liao et al. / Ciambrone to produce a relatively inexpensive cap that enables reliable soldering as well as provides a means of mechanical handling during production. As for the specific type of plastic being *translucent* and/or *red*, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416 (CCPA 1960).

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liao et al. (US 6,877,990 B2) and Ciambrone (US 5,626,280) as applied to claim 21 above, and further in view of Edwin et al. (US 5,262,594). Liao et al. as modified by Ciambrone has been discussed above.

However neither Liao et al. nor Ciambrone show or teach exposing the cap and the socket to a reflow oven producing both infrared and convective heating.

Edwin et al. does teach a reflow oven producing both infrared and convective heating (Col. 6, lines 8-10).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a reflow oven that produces both infrared and convective heating as taught by Edwin et al. to further modify the surface mounting methods of Liao et al. / Ciambrone for the purposes fully utilizing the cap design which would reduce the amount of time the socket needed to be in the oven by having the method affected by both infrared radiation and forced air.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa Girardi: Telephone number (571) 272-5924.

Monday – Friday 8 a.m. to 4:30 p.m. (EST)

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula Bradley can be reached on (571) 272-2800 ext 33.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VG
Art Unit 2833
September 27, 2005

THO D. TA
PRIMARY EXAMINER